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ited a large Guinea worm taken from a pony, in Madras. Only one previous instance of the occurrence of this parasite in the horse has been mentioned, and its authenticity has been doubted. —Kossman in *Zoologischer Anzeiger* states that the *Entoniscus*, a parasite Isopod, is an endoparasite; these Isopods are usually external parasites. —C. P. Sluiter in the same journal describes the segmental organs in certain Sipunculidæ from Malaysia. —Farther additions to our knowledge of the fishes of Lower California and the Gulf of California are recorded in the Proceedings of the U. S. National Museum by Messrs. Jordan and Gilbert. —Another paper of value in the same serial is that of Mr. Dall on the genera of Chitons, especially the fossil forms. —An elaborate account of the structure and development of the gar pike by Messrs. Balfour and Parker, read before the Royal Society, is reported in *Nature*. As regards the skull the authors say that its morphology cannot be understood "unless it be seen in the light derived from that of the Elasmobranchs, the sturgeon, and the anurous larva on one hand, and that of *Amia calva* and the Teleostei on the other. —P. Geddes gives in *Nature* an abstract of an important paper on animals containing chlorophyll, such as Spongilla, Hydra, and certain Planarians, while others as Actinia, &c., contain chlorophyll originating from minute algæ which he calls *Philozoön*, which inhabit these animals. The same discovery was recently published by Dr. Brandt, so that both observers independently arrive at nearly the same conclusions, M. Geddes, however, differing in some important particulars.

ENTOMOLOGY.¹

CARNIVOROUS HABITS OF MICROCENTRUS RETINERVIS.—I noted a circumstance on Sunday, October 23, which to me was very interesting. On what is called Mill island, in the Mississippi, two miles above Burlington, there are a number of burr oaks clustered on the extreme point of the island. The trunks were covered with thousands of *Megilla maculata* Deg. A large number of Locustidæ, I think *Microcentrus retinervis* (as near as I can determine them), were apparently feeding upon the beetles. It was so much aside from the habits of the Locustidæ, as I thought them to be strictly herbivorous, that I watched them very closely. They seized the beetles with their front legs, holding them in the same manner as a squirrel its food, and kept biting until the wing covers were broken through, then masticated the abdomen. I took a number of fragments of the beetles as they were cast off, so I could not be deceived.—H. G. Griffith, Burlington, Iowa.

NOTE ON THE FIRST INSECT FROM WRANGELL ISLAND.—Dr. I. C. Rosse, of the *Corwin*, has given me a small spider and a dried

¹ This department is edited by PROF. C. V. RILEY, Washington, D. C., to whom communications, books for notice, &c., should be sent.

larva, which he picked up during a short visit of the *Corwin* to Wrangell island. As the officers of the *Corwin* were the first persons ever known to have landed upon this island, it is probable that these are the first insects from that locality, and it may therefore be interesting to note that the spider has been identified by Mr. Geo. Marx, of the Department of Agriculture, as "an undescribed species of *Erigone*," the larva being probably lepidopterous, but in too poor condition for determination.—*J. H. Kiddier, Washington, February 6th, 1882.*

LICHTENSTEIN'S THEORY AS TO DIMORPHIC, ASEXUAL FEMALES.—The translation into French by our friend, M. Jules Lichtenstein, of Dr. Adler's renowned paper on Dimorphism in Cynipidæ will be very welcome to all those who do not understand the German language, especially as the original and admirable plates are reproduced. We have already noticed Adler's discoveries. In the preface to the translation which Lichtenstein gives, is a very amusing illustration of the insufficient and misleading nature of his theory regarding the evolution of the Aphididæ, where he insists on calling the winged females *larvæ*, and their eggs *pupæ*, since he carries the analogy into the Cynipidæ, and would call the asexual females *larvæ*. He draws what he conceives to be proof of the correctness of his theory from the hypermetamorphoses of the Meloidæ, designating the coarctate larva as a pupa and implying that it shows the eyes, legs and jaws of the perfect insect, and yet produces instead of a perfect insect a larva like that from which it was formed. The error in this comparison lies in calling the fourth larval stage the pupa, when it has nothing to do with the pupa, but is simply a quiescent larva indicating none of the members of the perfect insect. It is in fact, as we have called it, a *coarctate larva*, and the eyes, legs and jaws represent those of the larva and have simply become rigid, whereas those of the perfect insect, as subsequently foreshadowed in the true pupa, have a quiet different aspect, and we fail to see how this coarctate larva form can be compared with an asexual female Cynips any more than with a female of the bisexual generation. The translator's work is admirably done and he adds an instructive catalogue of the known species of Cynipidæ at the end.—*C. V. Riley.*

NAPHTHALINE CONES FOR THE PROTECTION OF INSECT COLLECTIONS.—Mr. C. A. Blake, of Philadelphia, has been preparing cones of naphthaline run around a pin so that they may be stuck into a box with insects and that the naphthaline may permeate the box and last for a considerable time. They are made after a formula recommended by Drs. LeConte and Horn, and are very convenient to handle. They gave such promise of usefulness that we obtained quite a lot of them and went to the trouble of supplying all our insect boxes with the same. We have speedily

rejected them, however, and give this note of warning, especially to lepidopterists to whom they will prove particularly objectionable, as our experience of a few weeks suffices to show that they very quickly encourage greasing, and soon produce a relaxed sordid or greasy appearance of the insects. Another objection is, that by deliquescence the pale chocolate color of the cones communicates to, and discolors the lining of the boxes wherever it comes in contact therewith. They may not be so objectionable for Coleoptera and Hemiptera, though in many families they would certainly prove injurious. We much prefer the old method of protection, viz: the pouring in the box of a little pure benzine, or what is better, according to LeConte's formula, a mixture of 1 oz. nitro-benzole, 1 pint alcohol, $\frac{1}{2}$ oz. carbolic acid and 1 pint pure benzole.

INJURIOUS INSECTS IN CALIFORNIA.—Our California friends are very active in their warfare with the increasing number of their insect pests, and Mr. Matthew Cooke, chief executive horticultural and health officer, has recently sent us a neatly bound little treatise on the insects injurious to fruits and fruit trees of California, giving a good deal of valuable practical information which must be productive of great good. Mr. Cooke lays no special claim to entomological knowledge, and several determinations are erroneous. It is doubtful, *e. g.*, whether *Clisiocampa americana* or *Orgyia leucostigma* occur on the Pacific coast, and other species of these genera must be intended; while the determination, as *Nematus similis*, of a saw-fly larva injuring pear trees is made without any warrant, so far as we can find, the insect which we have bred from cocoons sent us by Mr. Cooke, proving to be something quite different. These technical shortcomings do not, however, impair the practical value of the manual.

SARCOPHAGA LINEATA DESTRUCTIVE TO LOCUSTS IN THE DARDANELLES.—From communications by Mr. Frank Calvert to members of the London Entomological Society, and a report of a committee appointed by said society to inquire into the matter, it appears that *Edipoda cruciata* Charp., which is the destructive species there, is preyed upon by parasites closely related to those which attack our *Caloptenus spretus*, and very much in the same way. Two Dipterous species are worthy of note, viz., a flesh-fly, (*Sarcophaga lineata* Fall.) and a bee-fly (*Callostoma fascipennis* Macq.). Of the *Sarcophaga*, Mr. Calvert remarks:

"I beg leave to call your particular attention to the larva that is found in the body of the locust, no longer a matter of doubt. Each locust has from one to three of these larvæ, which are seen on tearing open the neck and thorax. When the locust dies the larva, which is very active, leaves the body and buries itself in the ground with haste—proved by experiments I have made. The head is provided with a couple of black hooks which can be drawn in; these hooks are used when the larva is in motion, and to bury itself.

After a few hours the larva loses its liveliness in the ground. I have no pods at present to try if the larva feeds on the eggs of the locust.

A remarkable coincidence with the appearance of the parasite is the melting away of the immense swarms of locusts that were hatched; it is true some were devoured, but the great masses have died before the deposit of the egg; the country so freed round us is about twenty miles by forty. It is difficult to find locusts for specimens! * * * The body parasite has destroyed the locusts that escaped the *Callostoma* over 800 square miles.

PARASITIC DIPTERA.—To the parasitic Diptera that are already well known, *Dilophus*, a genus of *Bibionidæ*, should, it appears now be added as, according to Mr. R. H. Meade of England, it has recently been bred from larvæ of *Chætoptria hypericana*. The *Bibionidæ* have hitherto been known only as vegetable feeders in the larva state.

DORSAL LOCOMOTION OF *ALLORHINA NITIDA*.—In the October, 1879, number of the *Canadian Entomologist*, I published a note on the larvæ of *Lachnosterna fusca*, remarking on the numbers in which they occurred in the lawn in front of the Capitol at Washington, and describing the peculiar manner in which the larvæ moved when placed upon a smooth surface—immediately turning upon their backs and moving forward with considerable rapidity by the alternate contraction and expansion of the segments. The specimens were determined for me as *Lachnosterna* by an experienced coleopterist; but the next year, by the rearing of the adult, they were proved to have been *Allorhina nitida*. Professor Riley had meanwhile called my attention to the fact that in Le Baron's fourth report, he had figured the larvæ of the latter species upon its back and in the act of progression. The statement is also made in this report that this larva "when out of the ground crawls with ease on its back."

This interesting habit is not confined to this species, as Rev. Samuel Lockwood, in the *AMERICAN NATURALIST*, 1868, mentions the same fact of the full-grown larva of *Cotalpa lanigera*, stating, however, that the young larvæ walked normally upon their legs. Other Scarabæid larvæ will doubtless be found to share in the same habit.—*L. O. Howard*.¹

MODES BY WHICH SCALE-INSECTS SPREAD FROM TREE TO TREE.—I watched to-day a colony of *Hyperaspidius coccidivorus* Ashmead which has for two months or more been increasing on the trunk of a tall seedling orange tree. The main trunk of the tree is covered densely with Chaff scale,² and upon it the larvæ and imagos of the beetle are feeding. The greater number are now in imago. I found but one pupa although larvæ are still abundant. The

¹ Mr. W. Kite of Germantown, Philadelphia, sent to *NATURALIST*, some months ago, a description of the same habit.

² *Parlatoria Pergandii* Comstock.—Ed.

beetles, both larva and imago, feed upon the Coccids in all their stages. They never bite through or tear off the scale, but seem to push their heads under, between the bark and the scale. Larvæ of the scale-insect are quite abundant on the trunk, and these are sucked by the Coccinellid. Although this is not properly a breeding time of the scale, there are considerable numbers of scale larvæ wandering about, and I noticed again and again that they frequently mount upon the bodies of the Coccinellids while the latter are feeding and without attracting the attention of the beetle. It even seems to me that they are attracted by the smooth and shining surface of the *Hyperaspidius*' elytra, as I sometimes saw three or four of the scale larvæ together upon the back of a single individual of this extremely small beetle. As several large Coccinellids, *Chilocorus bivulnerus*, et al., are extremely common in all our groves, and all feed more or less upon Coccids, it does not seem surprising that the scale should spread from tree to tree. Another method of transportation has recently occurred to me. The shrike or butcher bird is very fond of selecting orange thorns as places to store insects. The bird is extremely common, and of course preferably selects orange trees that have long straggling branches, in fact, precisely those that are most thickly infested with Long scale. I know of one grove, much infested with scale and where at any time may be collected a double handful of dead or living insects (Orthoptera and common beetles like *Phanæus*) from the orange thorns upon which they have been impaled. The thorns on infected branches are always thickly coated with long scale, and in impaling a hard shelled insect like *Phanæus* many scales are torn off, and both scales and their eggs adhere to the insect. The shrike sometimes transfers the insects it has impaled upon one tree to a thorn upon another tree, or after making a meal of its prey which it takes off of a thorn, the bird flies off and wipes its bill on the next tree. In this way as well as upon its feet, the bird must spread scales from tree to tree.—H. G. Hubbard, *Crescent City, Fla., Dec. 12, 1881.*

ANTHROPOLOGY.¹

CHARNEY ON THE AGE OF PALANQUE.—I am strongly inclined to agree in the main, though not entirely with Charney's opinion in reference to the age of Palanque as expressed in the October number, 1881, of the *North American Review*. But the inscription on the tablet presents a serious difficulty to his supposition that it was of Toltec origin, unless Toltec and Maya be the same.

This is undoubtedly Maya, as it is not difficult to show that at least fifty of the characters are the symbols or hieroglyphs of Maya days and months with accompanying numerals. The large initial at the upper left-hand corner is probably the hieroglyph of the word *Pacumchac*, the name of a great religious festival held in

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